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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,070	07/25/2003	Karl-Heinz Kuebler	VWS-555-A	3124

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EXAMINER

CAMPBELL, THOR S

ART UNIT	PAPER NUMBER
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3742

MAIL DATE	DELIVERY MODE
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02/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/628,070	Applicant(s) KUEBLER ET AL.	
	Examiner Thor S. Campbell	Art Unit 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/25/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the resistance wire embedded in electrically conductive material must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims require that the heating means includes a resistance wire embedded in an electrically conductive material. No such limitations exist in the originally filed disclosure. The applicant must remove the new matter or cancel the claims. For examination purposes, the newly added limitation read on a "calrod" type heater as suggested by applicant's disclosure.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 requires the heating means to be at least partially encapsulated. There is no disclosure to support what is meant by partially encapsulated. For the purpose of examination, partially encapsulated is read to mean in contact with.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 8, 9, 12, 14-18 are rejected under 35 USC 102(b) as being anticipated by Wade.

Wade discloses an apparatus for heating fluid including a fluid source for supplying fluid for discharging from the reservoir; a heater means comprising a thermally conductive mass (10) heating means (12), thermally coupled to the thermally conductive mass, imparting heat to the thermally conductive mass a fluid flow path formed in the mass between an inlet and an outlet, the fluid flow path coupled in heat transfer relation to the heating means so that fluid in the fluid flow path absorbs heat from the thermally conductive mass. It is noted that the method of making the device does not distinguish the device from the prior art having the structure claimed. Further, it is noted that the method of forming a fluid heating component, does not distinguish claim to a method of heating fluid over prior art showing all the steps of heating the fluid.

Claims 15, 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Bochud (US 6243535).

Bochud discloses a method of making a heating device for heating fluid comprising, injection molding aluminum directly around a heating body, by applicant's admission in papers filed 5/19/06.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 15-18 are rejected under 35 USC 103(a) as unpatentable over Wade in view of common knowledge in the art as evidenced by Bochud (US 6243535).

Wade discloses an apparatus for heating fluid including a fluid source for supplying fluid for discharging from the reservoir; a heater means comprising a thermally conductive mass (10) heating means (12), thermally coupled to the thermally conductive mass, imparting heat to the thermally conductive mass a fluid flow path formed in the mass between an inlet and an outlet, the fluid flow path coupled in heat transfer relation to the heating means so that fluid in the fluid flow path absorbs heat from the thermally conductive mass. Wade does not explicitly disclose insert molding the heaters in the thermally conductive mass. Bochud discloses insert molding a heater in a thermally conductive body in order to “entirely surround” and “ensure upon shrinking or cooling” the “securement” of the heating element. It would have been obvious to one of ordinary skill in the art to insert mold the heater in the thermally conductive mass for the reasons delineated above. It would be further obvious to secure the heater of Bochud in place so to precisely locate said heater while insert molding the heater in the mass.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bochud.

Bochud teaches the claimed invention except for an explicit teaching of connecting a ground to the heating element. It is well known in the art of fluid heating to connect a ground to the heating element for reasons of safety.

Claims 2-4 are rejected under 35 USC 103(a) as unpatentable over Wade in view of

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Cassidy.

Wade discloses an apparatus for heating fluid including a fluid source for supplying fluid for discharging from the reservoir; a heater means comprising a thermally conductive mass (10) heating means (12), thermally coupled to the thermally conductive mass, imparting heat to the thermally conductive mass a fluid flow path formed in the mass between an inlet and an outlet, the fluid flow path coupled in heat transfer relation to the heating means so that fluid in the fluid flow path absorbs heat from the thermally conductive mass. Wade does not explicitly disclose a control means, connected to the heating means, for activating the heating means; and a thermally conductive medium coupled in heat transfer relationship between at least a portion of the control means and the thermally conductive.

Cassidy discloses *inter alia* a fluid heater comprising a fluid flow channel and a control means (104) connected to the heating means, for activating the heating means; and a thermally conductive medium (134) coupled in heat transfer relationship between at least a portion of the control means and the flow channel. It would have been obvious to one of ordinary skill in the art at the time the invention was made, in view of Cassidy, to modify the device of Wade to include *inter alia* a printed circuit board for controlling the heater, and to place the PCB in contact with the thermally conductive mass via a thermally conductive medium in order to maintain the compactness of the heating device while using waste heat generated by the control components to further heat.

Claims 5-7, 10-11 are rejected under 35 USC 103(a) as unpatentable over Wade in view of Rochitelli.

Wade discloses an apparatus for heating fluid including a fluid source for supplying fluid

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for discharging from the reservoir; a heater means comprising a thermally conductive mass (10) heating means (12), thermally coupled to the thermally conductive mass, imparting heat to the thermally conductive mass a fluid flow path formed in the mass between an inlet and an outlet, the fluid flow path coupled in heat transfer relation to the heating means so that fluid in the fluid flow path absorbs heat from the thermally conductive mass. Wade does not explicitly disclose a control means, connected to the heating means, for activating the heating means; and a thermally conductive medium coupled in heat transfer relationship between at least a portion of the control means and the thermally conductive.

Roccitelli discloses an apparatus for heating fluid including a fluid source for supplying fluid for discharging from the reservoir; a heater means comprising a thermally conductive mass (1) heating means (36), thermally coupled to the thermally conductive mass, imparting heat to the thermally conductive mass a fluid flow path formed in the mass between an inlet and an outlet, the fluid flow path coupled in heat transfer relation to the heating means so that fluid in the fluid flow path absorbs heat from the thermally conductive mass, a control means (39), connected to the heating means, for activating the heating means; and a thermally conductive medium (28, 29) coupled in heat transfer relationship between at least a portion of the control means and the thermally conductive.

Claim 13 is rejected under 35 USC 103(a) as unpatentable over Wade in view of Rochitelli and further in view of common knowledge in the art as evidenced by Gusmer (US 3782456).

Wade and Rocheitelli disclose the claimed invention as described above except the positioning of an o-ring gasket between closure and the mass. It is generally well know to seal

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components in a fluid heating system with an o-ring gasket, as evidenced by Gusmer. Gusmer discloses the use of an o-ring gasket for sealing a similar closure to a similar thermally conductive mass. It would have been obvious to use an o-ring in the Wade device to seal the union since it is a well-known means of sealing as evidenced by Gusmer.

Response to Arguments

Applicant's arguments filed 11/26/07 have been fully considered but they are not persuasive. With respect to claims 1-14, applicant argues again that the structure of the insert molded heater and the prior art are not the same and therefore the claims define over the art. The examiner disagrees with the applicant's assertion that the "insert molded" heater is structurally different, both the prior art and the applicant's claimed invention have a heater in contact with a thermal mass.. It is well established that the method of making a device does not serve to distinguish lacking a showing of unexpected results. Applicant has failed to show unexpected results from the insert molding method, especially since Bochud teaches the benefits of such a process. It is noted that the broadest interpretation of the Wade reference reads on the claims since the heater is broadly interpreted as the resistance wire and the electrical insulators combined and therefore the "heater" as thus defined IS in direct contact with the casing. For further support for this interpretation, applicant is pointed to the instant invention, in as much as the CALROD type heating element is known to be a resistance wire embedded in a thermally conductive, electrically insulative material and further surrounded by a metal sleeve or jacket.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thor S. Campbell whose telephone number is 571-272-4776. The examiner can normally be reached on Mon-Fri 5:30AM-2:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thor S. Campbell/
Primary Examiner, Art Unit 3742

TSC